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- - REMARKS - -

Claims 1-27 remain in the case.

Claims 1, 2, 4, 21, 26 and 27 have been amended without addition of new matter to point out more particularly Applicant's invention.

None of the references, taken singly or in combination, discloses or suggests Applicant's invention.

A. REJECTION OF CLAIMS 1-8, 11, 12, 26 AND 27 AS ANTICIPATED UNDER 35 USC §102 IS ERRONEOUS AND SHOULD BE RECONSIDERED AND WITHDRAWN.

Under 35 U.S.C. 102, anticipation requires the disclosure in a single piece of prior art of every limitation of the claimed invention. Electro Med. Sys. S.A. v. Cooper Life Sciences, 34 F.3d 1048, 32 USPQ 2d 1017, 1019 (Fed. Cir. 1994).

The Hutchinson reference does not meet these very specific anticipation requirements, as set forth by the above authority.

The Hutchinson device is a steam generator operating within an immersible heater in a liquid, whereas the invention of the application is based upon a flash boiler with a superheated vaporization chamber. The internal ports of the Hutchinson device function as baffles to create turbulent mixing as the water in the Hutchinson device heats to create sufficient pressure for steam to exit. Regulation of output is accomplished by spray nozzles and controls thereof at the output of the Hutchinson device. See for example, Hutchinson, Col. 3, lines 49-58; see also Col. 8, lines 27-29. (Emphasis added).

In the above-cited passages, it is clear that the Hutchinson device regulates output by means of the output pressure control valve 48, and that the generation of superheated steam is a slow step-by-step process: “Water is injected at an input and flows through a series of time delay turbulent [sic] creating baffles positioned in the heating cylinder to form a diffused flow path of variable length and dwell time as it passes from the input to the exit. In the steam generating mode the diffused spiral flow path will cause the small amount of water injected at the input to be converted to steam as it is transported to the output port.” Hutchinson, column 3, lines 42-48.

In a passage cited in the Office Action, the Hutchinson disclosure states: “Pulse type piston pump 30 provides low flow capacity and pressure required to inject feed water into the input 12 against the steam generating cylinder 10 internal pressure as regulated by output variable pressure regulating control valve 48.” Hutchinson, Col. 6, lines 56-60 (Emphasis added).

“Another unique feature is the use of a variable pressure control valve 48 at the output 14 of steam generating cylinder 10. Variable pressure control valve 48 allows both the pressure and flow volume of the steam output of heater/baffle system to be controlled. Variable pressure control valve 48 also allows further regulation of the overall fluid/vapor dwell time for the formation of steam within steam generating cycle 10. Variable pressure control valve 48 also allows direct control of output pressure...” Hutchinson, Col. 8, lines 20-29. (Emphasis added).

This is in complete contrast to the regulation feature of the instant invention at the input as defined in the subject amended claims. There is no counterpart in Hutchinson to the “adjustable control means for adjustably controlling ongoing input of liquid during ongoing input of said liquid into said vaporization chamber whereby generation of superheated vapor is adjustably controllable while said system is in operation,” as recited in amended Claim 1 hereof.

All control in the Hutchinson reference is at the output port 48. Any input control would be contraindicated because of the basic difference in structure and function between a flash boiler and the heating arrangement in Hutchinson.

Applicant respectfully traverses the position in the Office Action: "The applicant argues that the applied prior art Hutchinson does [sic] show the claimed adjustable control means for controlling input of liquid into said vaporization chamber. This control means is clearly shown by Hutchinson as shown in Figures 3, 11 and 24. The input of liquid is clearly done with the microprocessor that controls the pump that pumps the liquid into the vaporization chamber." Office Action dated 2/12/04, p.4. The foregoing is not correct in that the Hutchinson reference does not show Applicant's adjustable control means for adjustably controlling ongoing input of liquid during ongoing input of the liquid into the vaporization chamber whereby generation of superheated vapor is adjustably controllable while the system is in operation.

Similar considerations apply to amended method claims 26, 27.

Amended Claim 26 recites: the step of "providing capability of adjustably controlling volume, pressure or velocity on line of output superheated vapor for a selected object to be cleaned by adjustably controlling in an ongoing manner volume, pressure or velocity of said liquid upon being subjected to said superheating."

Amended Claim 27 recites the step of "providing the capability of controlling output of superheated vapor substantially continuously . . . by adjustably controlling volume, pressure or velocity of said liquid upon being subjected to said superheating." As noted in connection with the apparatus claims above, the specified capability does not exist in Hutchinson.

Accordingly, amended Claims 1, 2 cannot be, and are not anticipated by the Hutchinson reference. Similarly, original Claims 3-8, 11, 12, and amended claims 26 and 27 are not

anticipated by Hutchinson in view of Applicant's "adjustable control means for adjustably controlling ongoing input of liquid during ongoing input of liquid into said vaporization chamber whereby generation of superheated vapor is adjustably controllable while said system is in operation" contained in base Claim 1, which limitation is as noted not present in the Hutchinson reference, and in view of the provision in amended Claim 26 of capability for "adjustably controlling on line" output of liquid and in amended Claim 27 of capability of controlling output "substantially continuously" by "adjustably controlling . . . liquid upon being subjected to superheating."

Accordingly, rejection under 35 USC §102 is not well taken and should be reconsidered and withdrawn.

**B. REJECTION OF CLAIMS 1-27 FOR OBVIOUSNESS UNDER 35 USC §103 IS  
ERRONEOUS AND SHOULD BE RECONSIDERED AND WITHDRAWN.**

Obviousness may not be established using hindsight or in view of the teachings or suggestions of the inventor. *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.* 73 F.3d 1085, 37 USPQ 2d 1237 (Fed.Cir. 1995).

It is well-established that a reference should be considered as a whole and portions arguing against the claimed inventions must be considered. *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986). As noted in *Gillette Co. v. S.C. Johnson & Son, Inc.* 919 F.2d 720, 16 USPQ 2d 1923 (Fed. Cir. 1990), the closest prior art reference "would likely discourage the art worker from attempting the substitution suggested by [the inventor/patentee]." (Emphasis in the original).

Under the foregoing authorities, therefore, the rejection under 35 USC §103 of claims 1-27 as unpatentable over Friedheim (U.S. Pat. No. 5,471,556) or Friedheim (U.S. Pat. No.

4,414,037) in view of Hutchinson (U.S. Pat. No. 6,393,212) is erroneous and should be reconsidered and withdrawn.

As noted above, the Hutchinson device and the apparatus of the present application are wholly distinct and are in totally different fields: Applicant's being a flash boiler (a device for extremely rapid —i.e., "flash" production of superheated vapor), as opposed to the relatively slow and relatively low temperature production and vapor of the Hutchinson device.

On that ground alone, there would be no incentive for anyone skilled in the art to seek in any field of search for the Hutchinson device in an attempt to reconstruct the device of the instant application. *In re Oetiker*, 977 F.2d 1443, 24 USPQ 2d 443 (Fed. Cir. 1992).

Moreover, there is no showing or suggestion in the art of record, singly or combined, of the input control recited in the claims of the instant application. There would in fact be no point to an input control for the Hutchinson device because of the relative slowness of the generation of the superheated vapor thereby, rendering any such input control ineffective and superfluous. Clearly, the Hutchinson reference discourages input superheated vapor control due to its focus on control at the output, rendering the hindsight reconstruction of the Office Action impermissible. *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc.*, *supra*.

The Berthoud reference (U.S. Pat. No. 3,863,841) is inapposite and inapplicable on similar grounds as discussed above in connection with the Hutchinson reference. Berthoud involves spray nozzles and control thereof for control of liquid at output for large volume and area spraying, such as fields.

In the instant invention as defined by the claims, output volume is controlled at the input by controlling input of liquid for vaporization. Output control herein merely reduces volume and

adjusts final exit pressure. The Wahlin reference (US Pat. No. 2,683,626) is inapposite and inapplicable: the device provides means to control sprays at the output of a dispensing system.

Similar considerations apply to independent amended method claims 21, 26, 27.

The "flash boiler" aspect of the present invention makes it feasible to employ input control for the purpose of controlling output of superheated vapor. Clearly, as described in the specification, a variation in the flow of liquid into the vaporization chamber will result in substantially completely extremely rapidly vaporized superheated vapor, and will vary the output, since the vapor upon its creation from the input liquid is almost immediately available for issuance at output. The substantially greater speed with which the instant invention works vs. the Hutchinson device allows for the control of output via the control of input; since the Hutchinson device is relatively slow and operates at a relatively low temperature, this would not be the case for the Hutchinson device.

Applicant's Second Declaration annexed hereto (including all material in his 03/09/06 Declaration) clearly establishes that Applicant's system providing substantially instantaneous vaporization affords adjustable control of output of superheated vapor by adjustably controlling input of liquid for superheating during operation of the system (i.e., on line, continuously) as opposed to the absence of such ongoing adjustable control in the references including U.S. Patents Nos. 4,414,037 and 5,471,556.

In the references cited, Friedheim Nos. 4, 414, 037 and 5,471,556, input of liquid to the vaporization chamber is wholly pre-set as to volume, flow rate and pressure. Input of liquid is provided by a motorized pump operating with pre-determined parameters - i.e., a pre-determined flow rate (4.9 gallons per hour in an embodiment described in the '037 Patent). '037 Patent col. 5, lines 25-41, col. 6, lines 13-19. The motor is set to operate at 366 rpm and with the particular dimensions described in the '037 patent (col. 5, lines 30-37) to pump at the rate of 4.9 gallons/hour.

As stated in the appended copy of the Second Declaration of Max Friedheim "In order to change the preset operating parameters of the '037 system it is necessary either to use a different pump with different operating specifications or to open the pump housing and attempt to tinker with the pump to change its operating performance. Both of these procedures are time-consuming and inefficient and, most importantly, require the pump to be taken offline, thus halting operation of the entire system." Second Decl. of Max Friedheim, para. (5).

By contrast to the cumbersome procedures referred to above regarding changing liquid input to the '037 system vaporization chamber, in the instant system adjustment of ongoing liquid input is accomplished during ongoing liquid input to the vaporization chamber.

As stated in the Second Declaration of Max Friedheim: "This [capability for ongoing adjustably controllable input] is an important advance because it enables the system to be employed flexibly for varied purposes corresponding to particular required outputs by merely suitably adjusting the liquid input by means of valve 41 and valve control 43. Such input can be varied not only in volume but in pressure and velocity depending upon the pressure and velocity of liquid as regulated by the valve and valve control. This capability of input control provides output control of pressure, volume and velocity. This in turn permits the system to be efficiently employed for many and varied applications. For example, conventional cleaning of firearms, jewelry and the like and sterilization of surfaces may be accomplished employing the parameters described in the '037 patent. By adjusting downward (i.e., providing smaller fluid input) the same system can be employed to clean and/or disinfect small or fragile parts and components such as medical canulas, needles, and the like, without taking the pump and/or system offline.

"In this manner, the present system provides the capability of continuous use and adjustment for different tasks or within the same task as, for example, to increase output pressure when less accessible portions of the object of the output must be reached." Second Declaration of Max Friedheim, paras. 6, 7.

Based upon the foregoing, it is respectfully submitted that the claims as amended are patentable, that all rejections should be withdrawn and that all claims should be allowed. *Para-Ordnance Manufacturing, Inc. v. SGS Importers International, Inc., supra.*

Respectfully submitted,  
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